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ABSTRACT

The paper is designed to help managers of mainstreamed programs set up intensive staff training courses on mainstreaming. A brief analytic survey of the literature is followed by a discussion of practical applications of mainstreaming (including philosophy, curriculum, support services, and evaluation). The remainder of the paper reviews procedures involved in developing intensive staff development courses. Topics considered include merging several courses into one through the selective use of performance-behavioral objectives, curriculum articulation by objectives, and the transition from teacher-centered to learner-centered programs. (CL)

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PROFESSIONAL TRAINING

ACTIVITIES

AS A PART OF

MAINSTREAMING THE HANDICAPPED

(Intensive Courses for In-Service Staff Development)

An Analytical Survey
of the
Literature



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Related Research:

In a recent survey of Occupational Education programs for the handicapped, Dr. R. Tarrier of CUNY R and D Center observed that professional training activities were the second most frequently observed indicators of effective successful mainstreaming programs.

Source:

R. Tarrier

Mainstreaming

NY: CUNY R and D Center (1978)

Application:

This research finding can be interpreted to mean that staff development is one way to increase the effectiveness of any program mainstreaming handicapped students into an occupation program on the secondary level.

Objections:

Typical complaints emerge whenever an in-service training program is used to increase teacher effectiveness:

Complaint A:

The training took too long.

Complaint B:

There are too many training sessions to attend.

Complaint C:

There is too much to learn in the time available.

Complaint D:

A memo or a module could have done a better job in less time and at lower cost.

Source:

Planning and In-Service Education
(ERIC microfiche ED-088-861)

Evaluating Teacher In-Service
Workshops in Terms of
Learner Benefits
(ERIC MF Ed-106-272)

Possible Solution:

One way to provide cost-effective staff development is to develop intensive courses. Intensive courses accomplish more pre-specified objectives in less time.

The results of an intensive course can be reproduced in an independent study module. Such modules can be used by attendees as a reminder of what happened and by absentees as a make-up activity and by new staff as orientation to the program.

The following pages tell managers of mainstreamed programs how to set up INTENSIVE COURSES.

MAINSTREAMING
(INTENSIVE COURSES)

An Analytic Survey of the Literature

Each of the following citations helps explain the educational impact intensive courses for teachers can have on mainstreamed handicapped students.

1. DID A CHANGE OCCUR?

Intensive courses that produce measurable, observable, or dramatically beneficial changes are more likely to be perceived as "benefitting handicapped students directly."

SOURCE:

G. Kasten Tallmadge
IDEABOOK
Washington, DC: U.S. Government
Printing Office (1977); p.9

2. WAS THE CHANGE CONSISTENT ENOUGH AND OBSERVED OFTEN ENOUGH TO BE SIGNIFICANT?

Intensive courses must be more than a one shot affair involving only a small number of teachers. Teachers must learn to base their instruction on the results of systematic assessment of students' performances.

SOURCE:

Thomas M. Stephens
Teaching Skills to Children with
Learning and Behavior Disorders
Columbus, Ohio: Merrill (1977); p.211

3. WAS THE CHANGE EDUCATIONALLY SIGNIFICANT?

Past experience, expert judgments, theory, and statistical procedures must be used to weigh the size and worth of intensive courses. Convincing examples of help to the handicapped are necessary.

SOURCE:

G. Tallmadge
A Practical Guide to Measuring
Project Impact on Student Achievement
Washington, D.C.: Supt. of
Documents (1977)

4. CAN THE INTENSIVE COURSE BE REPEATED ELSEWHERE WITH A REASONABLE EXPECTATION OF COMPARABLE SUCCESS?

An intensive course that works only in one unique environment or only with certain participants may be deriving its effectiveness mainly from the staff members, the trainees, the environment, or other elements not generally available.

SOURCE:

D. P. Horst
A Practical Guide for Measuring
Project Impact on Student
Achievement
 Washington, D.C.: U.S.
 Government Printing Office (1975)

5. HOW PLAUSIBLE IS IT THAT THE OBSERVED SUCCESS RESULTED MAINLY FROM THE INTENSIVE COURSE?

The evaluation question becomes, "Are other explanations likely?"
 Other causes might include:

- Time heals most wounds. (WAIT)
- Live and grow stronger. (MATURE)
- Things eventually work out. (MUDDLE THROUGH)
- People like attention (HAWTHORNE EFFECT)
- Let's work extra hard to prove ourselves
 (JOHN HENRY EFFECT)

SOURCE:

G. Saretsky
 "The OEO P.C. Experiment and the
 John Henry Effect." Phi Delta
Kappan, 1972, pp. 579-581.

6. IS THE INTENSIVE COURSE EVALUATION DATA PRESENTED IN AN INTERPRETABLE, EXPLAINABLE, AND BELIEVABLE WAY?

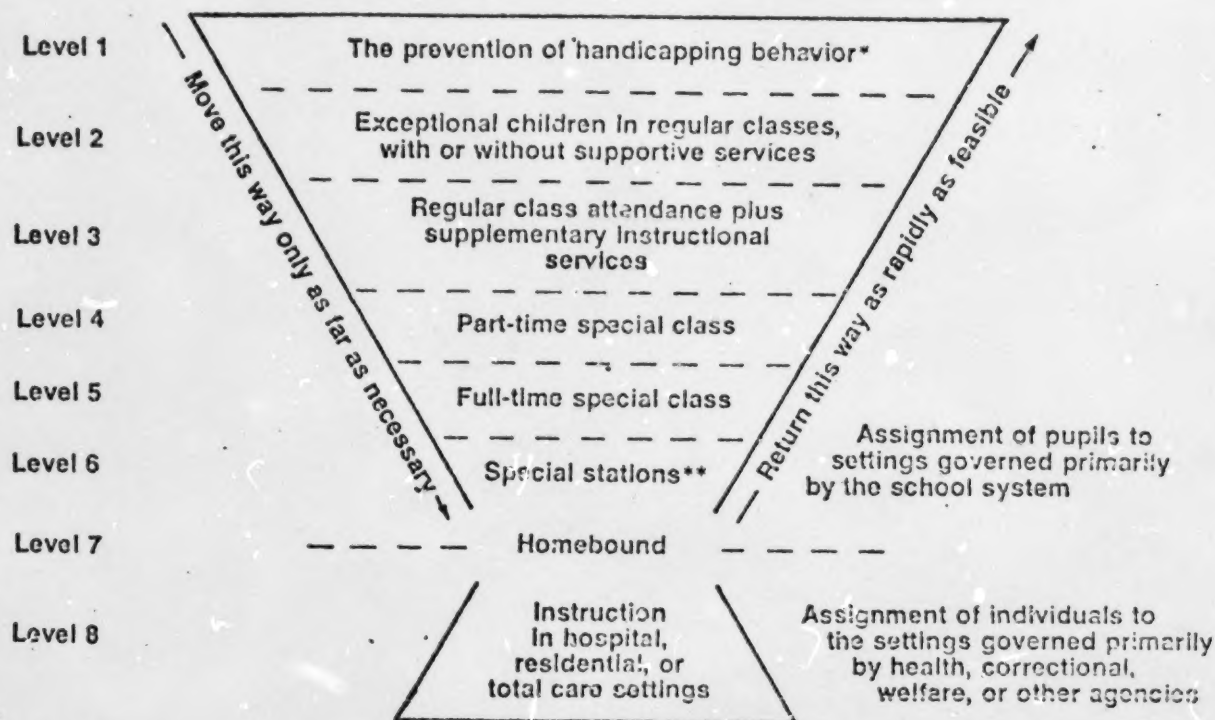
The data must be presented in a consistent and logical format. There must be enough data to satisfy the skeptical reader of the evaluation report. Inferences must be backed up with relevant evidence. Avoidable errors must be completely eliminated.

SOURCE:

D. T. Campbell
Experimental and Quasi - Experimental
Designs for Research
 Chicago: Rand McNally (1966)

1. Mainstreaming as Inclusion, not Exclusion. (DEFINITION)

Mainstreaming is intended to integrate people who are exceptional into society. Figure 1, reproduced below, describes eight levels of integration.



*This means the development of positive cognitive, affective, and psychomotor skills in all pupils that will reduce or prevent the frequency of handicapping behavior.

**Special schools in public school systems.

Figure 1. The cascade system of special education service (E. Deno. Strategies for improvement of educational opportunities for handicapped children: Suggestions for exploitation of EPDA potential. In M. C. Reynold and M. D. Davis (Eds.), *Exceptional Children in Regular Classrooms*. Minneapolis: University of Minnesota, 1971.)

Each level is familiar to occupational educators who have served handicapped students.

Level	Example
2	Business and typing classes Coop. Work-Study programs
3	Resource room Remedial occupational education
4	Multi-occupational courses Introduction to occupations
5	Pre-vocational training
6	Schools for the deaf

2. Mainstreaming as Growth (PHILOSOPHY)

The administrators who develop more organized and smoother running mainstreamed programs share a common belief: "These students can achieve and grow." This attitude was evident in a number of specific administrative details.

3. Mainstreaming as Quality before Quantity (SIZE OF PROGRAM)

Administrators who develop successfully mainstreamed graduates concentrate on selection of students and staff training. Success breeds more success with greater numbers and with the more severely handicapped. Teachers who help in the student selection process are less likely to be overwhelmed by the unexpected. All of this requires staff development training.

4. Mainstreaming as Flexibility (STUDENT ASSIGNMENT)

Administrators who succeed with mainstreamed students need staff and personnel who respond to exceptional human needs of individuals rather than to labels that describe specific handicapping conditions.

5. Mainstreaming as a Three Tier Sequence (CURRICULUM)

Administrators who work hand in hand with Occupation Education and Special Education staff will develop a program and a working relationship that help handicapped students progress toward the goals specified in individualized education plans (IEP). These IEP's are usually implemented in three successive stages: (1st) pre-vocational classes followed by (2nd) multi-occupational classes leading to (3rd) regular vocational classes.

6. Mainstreaming as Extra Help and Individual Attention (SUPPORT SERVICES)

Administrators who think in terms of changing staff attitudes and attention to the handicapped demonstrate more observable program success than those who concentrate only on the legally required building, safety, and equipment modifications. Teachers need leadership and guidelines to make program changes based upon on-going student data such as performance, needs, and progress.

7. Mainstreaming as Coop Education (COMMUNITY AND STATE RELATIONS)

Administrators who evaluate their programs in terms of JOBS rather than in terms of GRADE POINT AVERAGES for the handicapped demonstrate success that appears due to Community and State involvement on a regularly scheduled and systematic basis. Advisory committees are a must for several practical concerns such as planning, development, operational coordination, dissemination, realignments of program based upon practices that worked elsewhere in similar circumstances, evaluation of progress and success, and securing of continuation funding.

8. Mainstreaming as a Process (EVALUATION)

Administrators who get funded and refunded share one common characteristics: they have easy-to-understand and easy-to-appreciate evaluation plans that measure the impact and success of their mainstreaming programs.

Shortly after the completion of this project, the Federal Government suggested seven evaluation areas that should be considered. The following listing of these areas is from the Federal Register for Tuesday, February 28, 1978: Vol. 43, No. 40, p. 8231 (43FR40:8231):

- (i) Accomplishment of program objectives.
- (ii) Child progress toward the goals specified in the individualized education plans
- (iii) The effectiveness of specific program components in relating to child progress.
- (iv) The effectiveness of project inservice training in improving staff knowledge and/or competency.
- (v) The effectiveness of steps taken to ensure parent-family participation.
- (vi) The effectiveness of dissemination activities.
- (vii) The effectiveness of replication activities.

9. Mainstreaming as a Model Program Responding to National Priorities (TARGET POPULATION)

Similarly, proposed Federal Guidelines (43FR40:8229) seem to imply that no one mainstreaming program can respond to all the needs of all handicapped populations. Here is a reprint from the proposed Federal Guidelines interpreted above.

Paragraph 121 h.8 Priorities

Model programs: Primary consideration will be given to applicants that develop educational programs that respond to one or a combination of the following priorities. The order does not indicate preference.

- (a) Career education for handicapped children;
- (b) Children with single handicapped conditions;
- (c) Economically disadvantaged handicapped children;
- (d) Handicapped children residing in rural areas;
- (e) Handicapped children residing in urban areas;
- (f) Multi-handicapped children;
- (g) Programs to serve handicapped children in an integrated (handicapped/non-handicapped) setting;
- (h) Secondary-level handicapped children;
- (i) Seriously emotionally disturbed children;
- (j) Severely-profoundly handicapped children.

(20 U.S.C. 1441, 1442)

NOTE

As would be expected, not all of the Features of Effective Mainstreaming Programs listed were found in any one program. However, the composite picture presented by these features is applicable to all of them. As administrative practices, they do make a difference in the effectiveness of the program.

MAINSTREAMING

Traditional and Contemporary Views

The following chart compares the traditional and the contemporary views:

<u>Steps</u>	<u>Traditional</u>	<u>Steps</u>	<u>Contemporary</u>
1.	Observe dysfunction	1.	Observe dysfunction
2.	Ask WHY	2.	Analyze HOW child is handicapped
3.	Speculate the <u>primary cause</u> such as brain damage, genes, family	2A.	Determine ultimate behavior or performance desired
4.	Speculate the <u>secondary cause</u> such as poor coordination, perception problems, emotional problems	2B.	Document what the child needs next
5.	Treat secondary causes since "basic treatment" is impossible	3.	Treat by beginning to develop the desired performance or behavior

1. The traditional approach wasted a lot of time looking for the alleged "real causes" of the problem. Its focus was on the PROCESS of learning and training such as motor, perception, memory, and other abilities. It really wanted to find the ONE BIG STEP, that is, INSTANT CURE by remedying the exact cause or causes.

2. The contemporary behavior approach begins with the observable deficiencies and not with the invisible causes. Its focus is on the PRODUCT desired, that is, adequate performance based upon daily progress. It really builds upon a number of SMALL STEPS, each one of which is a small success.

3. Traditional diagnosis asked: WHAT WENT WRONG? and WHY? (The teacher had to act like a physician, psychiatrist, biologist, or research scientist.)

4. Contemporary diagnosis asks: WHAT DO WE EVENTUALLY WANT THE LEARNER TO DO? and WHERE DO WE BEGIN TO HELP TODAY? The teacher's job is to TEACH, not SPECULATE. (The teacher has to act and function like a teacher.)

5. The contemporary view is that almost all performance can be improved through skillful teaching, even when the cause of the handicapping condition is unknown.

6. The traditional view was that eventually science will find the cause of every handicap and at that time the cure will be instantaneous and complete. (Teachers agree but haven't got time to wait since the mainstreamed child needs help right now while the CURE might not be available until a century or two later.)

9

BIBLIOGRAPHY

1. There may be MANY CAUSES of a single handicap. Rarely does a single event or factor cause a problem or a cure. Therefore, let's accept many possible solutions especially good teaching.

SOURCE:

T. Dobzhansky
Mankind Evolving.
New Haven, CN: Yale Univ. Press (1962).

2. Both with and without medical treatment, handicapped children need immediate good teaching.

SOURCE:

Thomas M. Stephens
Teaching Skills to Children with
Learning and Behavior Disorders
Columbus, OH: Merrill (1977).

MAINSTREAMING Support Services Techniques

The following techniques can be used to help handicapped students mainstreamed into regular classrooms:

IMITATION

1. Modeling means that almost all learning can occur vicariously by observing two things in others: (a) their behavior and (b) the consequences of that behavior. Both aggression and inhibition are learned this way.
2. Good example backed up with consistency counts. Students do what they see rather than what is said.
 - A. First, you must get their attention.
 - B. Second, you must make sure that the behavior desired is rewarded by you or by its consequences.
 - C. Third, use a variety of tactics.
 1. Provide good models in addition to yourself.
 2. Identify and discuss desirable behavior by getting students to recognize it.
 3. Use stories as examples.
 4. Rehearse behavior.

BEHAVIOR REHEARSING

1. Rehearsing means practicing and repeating behavior in a meaningful context.
2. A typical rehearsal includes the following directions.
 - A. Identify and discuss a specific needed improvement in behavior.
 - B. Provide information about its value, benefits, and effects.
 - C. Repeat and rehearse the behavior with rewards.
 - D. Discuss the practice sessions.
 - E. Observe students in real life situations to determine improvement.

OPERANT APPROACHES

1. The first rule is that frequency of behavior is increased by the consequences of behavior.
2. Change occurs when:
 - A. Correct behavior is rewarded and made the center of attention.
 - B. Wrong behavior is ignored, overlooked, or passed over.
3. Teacher attention and praise are more powerful and long lasting rewards than tokens, sweets, or toys.

DIRECT REINFORCEMENT

1. D.R. means "catching students in the desirable behavior and reinforcing the students immediately and forcefully."
2. This requires teachers who are both highly observant and positively oriented.
3. All teacher-student reactions result in some reinforcement of on-going student behavior. D.R. makes sure only desirable behavior is rewarded and encouraged.

SHAPING

1. Shaping means beginning with reinforcing approximations to the desired behavior and ending with rewarding only the desired behavior.
2. For example, to get a child to read, he is first rewarded for listening and then gradually led to read independently.
3. Similarly, many children have to be shaped into cooperation before they are ready for complex tasks such as reading.

CUING

1. Cuing means reminding and motivating the child verbally and non-verbally to demonstrate desirable behavior. If too many words are used, cuing degenerates into nagging which frustrates rather than motivates.
2. Cues or reminders must be consistent, clearly stated, and non-annoying.
3. Words, signals, motions, sound, odors, rituals, eye movements, clocks, periodic events, blackboards, posters, and other hints may all be used.

CONTINGENCY CONTRACTING

1. C.C. means specifying in advance which rewards will be given for which desirable behavior.
2. Long term rewards are used in many cases. These must be backed up with tokens, points, coupons, checkmarks, and other short-term rewards.
3. After a while, the child grows up enough to be motivated by long term rewards rather than only by immediate gratification.
4. Students need to learn that their behavior will result in rewards.
5. Interim rewards must go beyond immediate pleasure such as candy to teach students.
 - A. That they are progressing
 - B. That they have proof of their amount of progress
 - C. That marks, tokens, coupons, and points can be cashed in for BIG BACK-UP long term rewards

ANALYTICAL SUMMARY

SIGNIFICANT FINDINGS OF THIS REPORT

For More
Details, see:

Welcome to the Intensive Course

Many training sessions take too long. With this fact in mind, intensive courses have been designed to remove the fat from training. What remains is called "the intensive course," which accomplishes more pre-specified objectives in less time.

Page 1

An intensive course provides concentrated doses of data, people, and things in such a way as to maximize "success" in the most humanistic sense of the term. Speed of learning is only a secondary concern.

Page 2

An Intensive Course in Planning-Training

The most frequently asked questions about intensive courses are answered.

Page 3

Alternatives and footnotes are expressed in "telegrams" to you.

Page 4

The intensive course is aimed at the manager who wants results.

Page 5

Example No. 1:

Merging Several Courses into One

A typical problem the busy manager must handle is what to do when two major programs have one or two class sections that are under-enrolled for 1 or 2 semesters.

Page 6

The solution might be to zero in on common core goals, problems, and competencies through the recognition of performance objectives.

Page 7

Example 2:

Curriculum Articulation

Another problem the busy manager must handle is how to tie a curriculum together while allowing:

- (a) Open-ended progress
- (b) No-fail take-your-time progress
- (c) Room for all handicapped applicants
- (d) Room for all slow in-depth learners
- (e) Elbow room for slow but highly specialized learners

Page 8

Mastery learning provides one answer.	Page 9
Sequential steps provides another answer.	Page 10
Course-chopping is only a partial answer with characteristics 1, 3, 5, 7, 9, 11, 12 and 13	Page 11
Module-developing is a better answer with characteristics 2, 3, 4, 5, 6, 8, 10, 12, 13, and 14	Page 11
<u>Today's Agenda</u>	
However, the reader's concerns may go beyond merging underenrolled courses and articulating prerequisites and required courses, which were only examples chosen from many other possible concerns. Here is a do-it-yourself planning guide.	Page 13
When setting up your own intensive course, here are some of the basic management decisions you must make.	Page 14
You must specify documentable "learner benefits."	Page 15
You must decide whether the intensive course will be teacher-centered or learner-centered.	Page 16
You must decide whether to use programmed instruction or semi-programmed materials.	Page 17
EVALUATION: You must decide which of the five steps of "success" will be part of your assessment of the intensive course you plan and give.	Page 19
PRODUCTS: You must come up with tangible results that can be identified by:	
A. Product Numbers (i.e., sequence)	
B. Product Descriptions	
C. Product Target Dates	Page 21
PARTICIPANTS: You must decide which user characteristics are most important in selecting participants.	Page 22
Sample questions have been provided. These questions will require local revision before use.	Page 23
OBJECTIVES: Lest you become over-confident, a few cryptic warning about the misuse of behavioral objectives have been summarized. This page is meant to make you think. It won't be easy to scan. Don't get discouraged. Think it through.	Page 28
<u>A CHALLENGE: BRAIN-BUSTERS</u>	
Charts 1 through 5 are meant to exercise your non-verbal powers of analysis.	Page 29

Reason them through. Here are a few hints.

For More
Details, see:

[1] There is a difference between course-chopping (day-by-day regardless of progress) and module-developing (100% mastery before the next objectives no matter how long it takes).

Page 29

[2] Mastery points upward after 100% achievement. Mere exposure may lead nowhere (sideways), to dead-ends (slightly upward), or to discouragement (downwards).

Page 30

[3] The above differences between course-chopping (no mastery and no sequence) and module-developing (mastery plus sequence upwards, and sideways until ready to move upwards) are graphically displayable.

Page 31

[4] Course-chopping leads to frustration and apparent retro-gression, re-gression, and di-gression.

Modules work well with fast learners, slow learners, and previously frustrated learners.

Page 32

[5] The frustrated learner can be helped. This means "pacing" the course to the learner's success style and rhythm. Of course, some restraints still remain such as semester calendars, short-lived incomplete periods, deadlines, and sink-or-swim class schedules.

Page 33

However, the teacher that cares enough to stress quality over speed can help many previously frustrated learners.

Page 33

1

WELCOME TO THE INTENSIVE PLANNING-TRAINING COURSE

1. TODAY'S OBJECTIVES:

The objective today is to practice what we preach. As a result of today's session you should be able to go back home and plan a one hour training session for your teachers in the use of a simple to explain matrix that combines objectives, evaluation items, and learning resources across the three domains of knowledge, performance, and attitude.

Matrix is just another word for organization. We want you to pick up the bits and pieces that are now being done unsystematically back home and to place them together in a systematic fashion.

2. AN IN DEPTH ANALYSIS OF THIS OBJECTIVE:

This research is based upon a letter sent to the U.S. Department of Agricultural by a farmer back in the 1930's. "Dear Sir, Please stop sending me your bulletins on the latest advanced methods on agricultural farming. Right now, I'm not farming half as good as I already know how. What I need is somebody to kick me in the pants to get me organized in my farming. I need to apply what I already know."

3. A PROFESSIONAL RELATIONSHIP:

A lot of this work of applying research has been done through microfiche publication. The trouble with publications is that you can't ask them questions. Publications are usually written for somebody else, by somebody else who doesn't have the firsthand experience of the actual requirements you face on the job everyday.

Let's face it, it's very easy to be offended by one or two inaccurate words in a memo. You might think they are aimed directly at you. They might not apply to your situation. Some times these words might resemble outright criticism.

A mutually beneficial professional collaboration requires that both people be able to speak to each other in person and over the telephone without a lot of serious misunderstanding creeping in. This is why we want to start out with the face-to face contact wherein we can exchange opinions, ideas, and suggestions.

We don't want to resemble the situations in an office where people, each at the next desk, must communicate only by memo or by formal telephone calls. We need much more of the give and take interplay.

This will come when we can question each other without giving the impression of outright attack. This will come when we can ask for further information without giving the impression of prying. All of this takes time.

AN INTENSIVE COURSE IN PLANNING-TRAINING

QUESTION 1: What is the purpose of this intensive course?

ANSWER: As a result of this training session, you will be able to train teachers and educators in how to use performance-behavioral objectives, criterion-referenced test items, and educational technology effectively and inexpensively.

QUESTION 2: What prerequisites are required for participation?

ANSWER: To take this course, you must:

- a) be in a position where you direct, teach, supervise, or train teachers
- b) phone in or write in and confirm your availability for a specific scheduled training session; each session has only a limited number of openings, each of which must be confirmed in advance
- c) bring with you a one page introduction of you, your experience, your school, and your area of planning-training concern
- d) be willing to work in a small group atmosphere of give-and-take discussion; this means a two-way exchange

We Will Suggest Alternatives

TO

BY

1. Paperwork —————→ 1 page limitations, 9 sentences
2. Prolonged training —————→ 1 hour training, 1 hour applying
3. Philosophical lethargy —————→ applications tomorrow
4. Protracted ineffectiveness —————→ on line revisions tomorrow

Footnotes

1. We are all too busy to read any more than we do right now; we have even less time to write.
2. We are all educated enough to grasp this simplified approach in an hour or two; we need to learn how to apply it.
3. We need to act now; next week may be too late; if you're satisfied with what you're now doing, you don't need this approach.
4. We need to keep score in such a way that we can do better tomorrow; we need better teaching skills, not better editorial and psychometric skills.

SUMMARY

1. Patience is necessary. No one changes overnight unless the change is a small one.
2. Purpose is just as necessary. We don't want you to change everything. We want you to intensify your efforts by concentrating them on objectives that can be attained tomorrow.
3. Planning is necessary to avoid:
 - a) Doing nothing
 - b) Doing nothing worthwhile
 - c) Doing things so slowly you make neither errors nor any progress
 - d) Doing something you will later regret
4. Progress can be made in an intensive course in a very short training time because:

TARGETS: a) We zero in on attainable goals

TESTS: b) We self-evaluate every step of the way

TECHNOLOGY: c) We employ a wide variety of inexpensive resources

MERGING SEVERAL COURSES INTO ONE COURSE
THROUGH THE SELECTIVE USE OF PERFORMANCE-BEHAVIORAL OBJECTIVES

Very often a school system finds itself with courses that do not have sufficient enrollment. Sometimes, these courses are in very similar areas. The sudden drop in enrollment can be due to many reasons. The consequence of this is obvious for the school. The school must conserve its resources and combine the two related courses because of the lower enrollment.

Very often teachers compare the subject matter for these two parallel courses. They do find a certain amount of overlap. After this has been done, a new set of specifications has been developed which will allow the teachers to merge the two courses into one. Thus, what was previously two separate programs now becomes one specific program.

There is another way to do this through the use of performance-behavioral objectives. This is a very simple approach.

The first step is to specify the content of both courses in terms of objectives. This means that performance-behavioral objectives are developed for the two courses in question. These objectives are placed in rank hierarchy according to their value to the student.

The second step is to look at the list of the objectives. This is the time to search out overlap. The overlap will not necessarily be limited to the knowledge objective domain and the performance objective domain. Sometimes, the attitude objective domain with its stress on a worthwhile career will be a main focus of overlap.

The third step is simple. The teachers go through both lists of objectives and find out those goals which are most relevant to the needs of the students and to the needs of the labor market. This allows the teachers to develop a course that will facilitate individual student growth. Each student will be able to progress at his own rate. He will be able to choose those goals which he finds most appropriate for his particular career pattern.

Such an approach allows for a wide range of differential learner achievement. This means that some students may obtain only a small portion of the goals for the new course. Other students may be able to go so far as to cover during the same period of time the goals that would normally have taken two course to attain. This consideration given to individual difference has an obvious educational payoff in economy and effectiveness. It puts the emphasis on attaining objectives rather than on the number of minutes spent in class. It gives the student a taste of a competition that is a necessary part of the career world.

CURRICULUM ARTICULATION
BY OBJECTIVES, NOT MERELY BY CHANCE

Articulation is the desired objective whenever two programs are connected by one leading into the other. From the operational point of view, articulation means that students who have been trained in one segment of the educational community can make the transition to the next step without undue difficulty.

This would be a good time to look at educational programs that lack articulation. Whenever a student takes a course at the beginner's level and that same course is repeated on a more advanced level without changing the objectives attained, the student is forced to suffer from lack of articulation between the two programs. If the two programs had been articulated properly, the student would study one series of objectives in the first level. The second level would go immediately on to the next step after a suitable review to make sure that everything was understood.

Overlapping is not the only glaring example of missing articulation. If the student who has been prepared at a beginning level is not able to make the giant step required by the next stage of development in his chosen program, the two institutions giving a similar program are obviously not articulated. If mastery on the final level requires ten steps, it is easy to recognize that steps 1, 2, 3, 4, and 5 would be the proper province of the beginning level. If the next level starts with step 6, there is great evidence of articulation. If the only choice opened to students who have completed step 5 is step 7 at another institution, there is obvious evidence of a lack of articulation.

All of us have attended articulation meetings that basically were little more than cocktail parties intended to promote public relations. Someone presumed that if the professors of two or more institutions got along well together, then their educational efforts would certainly be articulated, or at least nonantagonistic one to the other.

This doesn't always work. A number of professors who are perfectly good friends do not have articulated programs. The difficulty is not in public relations. The difficulty is to be found in their objectives.

Sometimes articulation problems have been attacked by chopping up the ladder of success. It has been said that those training beginners are to start with the first five steps. Then, those who are charged with the advanced students will take steps 6 to 10. This can work. Sometimes it causes trouble. It seems to imply that the beginning instructors can go only so far. It doesn't leave open the possibility that some beginning students will go well beyond the beginning step 5. Then, when they arrive at the advanced institution, they will have to go back to step 6 and start all over again.

The simple way out of this solution is to come up with a series of mastery goals. This would mean that instead of a horizontal line of goals 1 to 10, each institution would start thinking in terms of chains and levels of mastery.

Let's take an example of mastery. If objective 1, 2, and 3 are easy to attain, we can say they are all on the beginners' level. In actuality, each one of these goals is a little bit higher. Step 2 goes a little bit higher than step 1. Step 3 goes a little bit higher than step 2. After a while, goals 1, 2 and 3 can be put together into a much higher functioning that is goal number 4. By a similar chain of reasoning,

goal number 5 is a little bit higher than 4. Goal number 6 is a little bit higher than number 5. After a while, goals 4, 5, and 6 can themselves be put together at a new higher level. This introduces us to the next level which begins with goal number 7. Goal number 8 is a little bit more complicated than number 7. Goal number 9 is a little bit more complicated than number 8. When these three goals have been mastered and are put together in a coordinated effort, a new level of mastery has been attained. This we call mastery level number 10.

In other words, we are saying to educators: don't think of your goals as being sequential steps all on the same level of difficulty. Don't limit the level of mastery that can be attained by an ambitious student. Don't push a slower, but effective student from attaining lasting mastery at his own rate of speed. If you work in a beginner's school, be ready to have some exceptional students. If you work in an advanced school, be ready to recognize these exceptional students when they begin and start them off on their own level of mastery once you have been convinced they truly are at this level. Don't force everybody to begin at the same entry point. Don't force everybody to work at the same rhythm or speed.

This approach to articulation has been simplified. We have simplified it in order to stress the point that articulation is something that should happen by objective and not by chance. This demands the intelligent cooperation of educators like yourself and your professional colleagues.

COURSE-CHOPPER <u>VS</u> MODULE-DEVELOPER

Identify each of the following statements either as CC (course-chopper) or MD (module-developer).

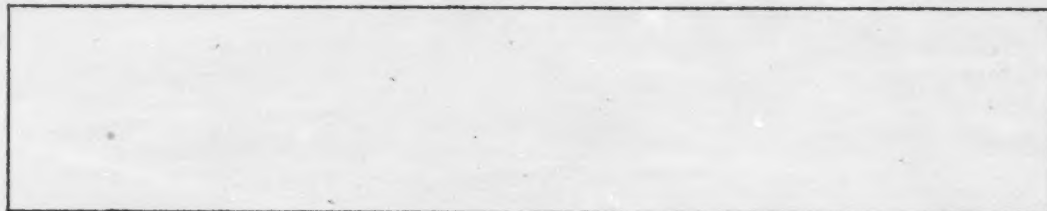
- | | | | |
|----|----|-----|--|
| CC | MD | 1. | 30 class sessions, 30 different instructional goals. |
| CC | MD | 2. | A hierarchy of operational objectives from which the learner may choose his starting point. |
| CC | MD | 3. | Course content has been divided and developed into convenient teachable pieces. |
| CC | MD | 4. | The end points of terminal objectives are quite specific; the means to get there offer a wide variety of approaches. |
| CC | MD | 5. | This course was pre-made by the best subject matter specialists available. |
| CC | MD | 6. | This course can be tailor-made to every individual student. |
| CC | MD | 7. | Each unconnected unit of this course is completely expressed in behavioral objectives. |
| CC | MD | 8. | Not all of this course is in perfect behavioral objective terminology, but each part is directed toward attainment of the overall mastery course objectives. |
| CC | MD | 9. | The path of progress of this course is linear; there is only one way to get to the top. |
| CC | MD | 10. | There are many ways to achieve the mastery objectives of this course; the resources form a multi-path approach. |
| CC | MD | 11. | Administrative directive about time and resources furnish the basis of all planning. |

- CC MD 12. Basic consideration was given to the question of how much time will be needed by a wide variety of individual learners to attain the mastery goal of the course.
- CC MD 13. The course was divided into small segments, each of which was very easy to learn.
- CC MD 14. This course provided for a variety of levels of skills. Some were easy, some were very difficult.

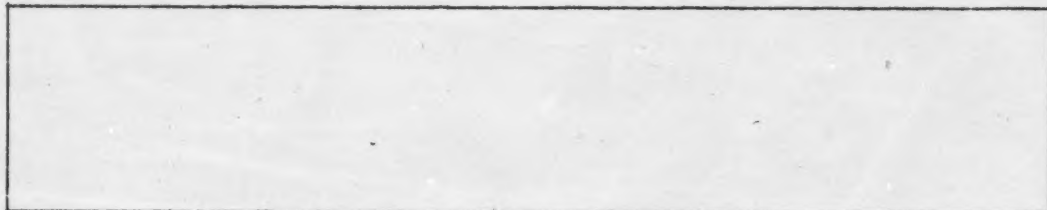
I. Definition of terms



II. Review of course outline



III. Introduction of course objectives



In the section entitled, "definition of terms," list specific words that you would like to have defined as part of today's agenda.

In the section entitled, "review of course outline," state your opinion about the current status and usefulness of the present course outlines.

In the section entitled, "introduction of course objectives," state how you plan to introduce gradually student-centered operational objectives for your course.

We want your suggestions in order to insure that the introduction of operational course objectives becomes a success.

A FEW BASIC DECISIONS

The following questions can be used as a self-study guide in order to come up with appropriate answers for any educational technology system you wish to develop. If you can't answer these questions unequivocally, you must consult with yourself or someone else to attain a clear and definite answer.

TRAINING: Who should receive the bulk of our training efforts?

- A. The teachers who will be carrying out this program in the classroom
- B. A nucleus of newly trained and semi-professional writers who will take care of the writing components of behavioral objectives and criterion-referenced testing

INDIVIDUALIZED: As far as your recordkeeping capacities are concerned, how many ways of learning do you want to be made available by your system to individual learners?

- A. One way
- B. A half dozen ways
- C. A different way for each individual learner

C-R TESTING: How do you want the correction of criterion-referenced test items to be handled?

- A. By a central correction agency using computers and the latest technology
- B. By each learner using self-pacing and self-correctional resources

HOW MANY GOALS: Where do you want to start writing the individual behavioral objectives necessary for your program?

- A. On the level of the type of objective that can be attained in a very short period of time
- B. On the level of three or four overall program goals and objectives that must permeate every segment of the course

STUDENT ENTRY: What type of student entry system do you envision for the program you are developing?

- A. Students may enter the program two, three, or four times per year plus twice during the summer session
- B. Students will enter and leave the program on a continuous basis

THE TRANSITION FROM TEACHER-CENTERED TO LEARNER-CENTERED

AN EXAMPLE OF TEACHER-CENTERED: The following list of objectives is presented in teacher-centered format. This means that the emphasis is on the teacher, presenter, or the person acting as instructor.

Our objectives are:

1. UPGRADE the teachers in terms of the latest knowledge of their specific field
2. GIVE the teachers in a specific trade area, an opportunity to share mutual experiences
3. GIVE the teachers an opportunity to resolve problems and to present innovated ideas to each other.

AN EXAMPLE OF LEARNER-CENTERED: The following objectives are based upon the above example. They have been transformed from teacher-centered to learner-centered. They place their focus of emphasis on the people in the audience who are there to learn, i.e., said another way, the goals are stated in expected behavioral changes.

1. The participants will upgrade themselves in terms of the latest available knowledge of their specific field
2. The participants will share mutual experiences in their specific trade area and related teaching issues
3. The participants will resolve problems they consider to be of high priority and of mutual concern
4. The participants will present innovative ideas to each other
5. The participants will develop a feedback loop in order to continue the give-and-take processes started during this inservice training session

THE DIFFERENCE BETWEEN PROGRAMMED INSTRUCTION AND SEMI-PROGRAMMED MATERIAL

Programmed instruction typically refers to a programmed textbook. The learner works through a series of exercises and responds to a series of feedback questions. The answers for the feedback questions furnish him with a scale for self-evaluation.

If the learner has responded correctly, this is interpreted to mean that he is ready for the next link in the series, of, either linear programming or branch programming. Linear programming refers to each learner going through the same sequence. Branch programming refers to learners going through an individualized system. Thus, in a linear programming situation, each learner will go through in sequence steps 1, 2, 3, 4, 5, and 6. In a branch programming situation, the learner who already knows steps 2 and 3 will be able to skip them. In other words, he will take steps 1, 4, 5, and 6.

Theoretically at least, the programmed instruction is able to stand on its own without the intervention of the teacher.

Semi-programmed materials play the same ball game, but with a different set of rules. They do not necessarily involve the same sequence of presentation of material, feedback questions for evaluation, and a prescription of what to do next. Semi-programmed material could be as simple as a set of directions to be used when going to the library or reading a book. Very often, semi-programmed instructional materials do not have the answer key. It is felt that, when the student is in doubt, he should consult a teacher.

In general, we can say that programmed instruction provides a prescription of exactly what to do next. On the other hand, semi-programmed materials are much more similar to a series of less specific instructions on how to use a wide variety of materials and resources.

The training sessions last two hours. They take place in Albany. We try to keep the group very small. That would mean approximately two or three trainees at the maximum, one or two trainers and one, two or three consultants, depending upon the training requirements of the people attending.

Our follow-up studies have indicated that, according to the opinion of the person trained, we have succeeded in about 60% to 70% of the cases.

We cover general areas. After somebody has been here, we hope to attain five objectives.

THE FIVE THINGS WE CONSIDER SUCCESS

STEP 1:

They go back home and work out a training plan that meets your approval, the approval of the superintendent, or anybody locally who has to approve it. Then, if they want it, they ship back to Albany their training plan, outlines, agenda, and objectives or whatever they work out. We tell them what the technical requirements are. We will go to our computerized bank of resources and we will say, "Here's your objective. We have a half dozen things you may or may not want to use." We ship these back to you and the administration will look them over and say if they are all right or not.

STEP 2:

Some afternoon after school, say from 3:00 p.m. to 4:00 p.m., this training session will be given for one hour, exactly as approved by you and the local administration.

The approval is by the local administration. We don't approve it. The training itself is given by your local man that we have trained.

STEP 3:

From 4:00 p.m. to 5:00 p.m., for example, this trainer will give a hands-on work session with the local teachers he has trained. We reduce the paperwork to a minimum and also increase the planning to a maximum. It boils down to each teacher filling out a form ($8\frac{1}{2} \times 11$), putting down nine parts of his plan. (It could be nine words or nine sentences). Then he goes to the trainer and other leaders there to look it over and get their approval.

STEP 4:

The next day, he goes back into class as usual. While he is in class, he tries to follow this nine point lesson, which has organized his objectives, his tests, and his resources.

After 15 minutes, the typical teacher says, "My plans were not adequate."

He is forced to improvise and found out what worked.

The first period might be a fiasco or semi-fiasco. The second time around or his second class period, he is going to start off with his strong points and come up with some better ideas that work with students.

In other words, student learning is the criteria, not his own personal premises. After a day of four or five periods, the teacher has not written anything more, but he has gone through a thought process that equips him to come up with a very good system.

STEP 5:

He goes back to his local man, his trainer. This trainer probably gives the same training session again. This time the teacher is listening. The teacher is asking the right questions. The teacher knows what is important and the teacher really has a motivation to learn.

With this in mind, we are ready to repeat the cycle. We find out a teacher is able to go into career education or any other aspect that he wants to develop with a lot of confidence.

What happened previously was that your schools, like yourself, have taken Saturday afternoons and evenings, brought in expensive trainers, trained them in behavioral objectives, criterion-referenced testing, and career education, and nothing happened because it was too technical. It was too theoretical.

Our psychology is to have the local man do the training. The local man is going to be there to pat him on the back or kick him in the pants when necessary.

PRODUCTS

FY July 1 to June 30

<u>PRODUCT</u>	<u>PRODUCT DESCRIPTION</u>	<u>PRODUCT TARGET DATE</u>
PRODUCT 1	Guidelines for the Use of Performance-Behavioral Objectives, Criterion-Referenced Testing, and Educational Technology in the Classroom.	July 1
PRODUCT 2	Two-hundred New York State Teachers Using Performance-Behavioral Objectives.	October 1
PRODUCT 3	A Coding and Classification System Permitting Retrieval by Nonparticipating Teachers.	December 1
PRODUCT 4	Criterion-Referenced Tests Correlated with Specific Objectives (Draft Edition).	March 1
PRODUCT 5	Revised Packages of Performance-Behavioral Objectives and Correlated Test Items.	May 1
PRODUCT 6	Second Revision of Performance-Behavioral Objectives, Criterion-Referenced Test Items, and Indication of the Various Price Tags Correlated with Specific Educational Technology Used to Attain These Objectives.	June 30

USER CHARACTERISTICS SURVEY

Try to answer the following questions with the choice of the alternative that most clearly describes your objective in asking for help to organize local planning sessions.

The purpose of this user characteristics survey is to pinpoint those half dozen people throughout the educational community who share all or most of their characteristics with you. This will enable you to work with someone who shares your viewpoint and your specific planning objective.

QUESTION 1

SOURCE: Where did you first hear about this available help to organize local planning sessions?

- A. RCU Newsletter
- B. Occupational Education Overview
- C. Elsewhere; specify _____

QUESTION 2

YOUR FAMILIARITY: Which of the following adverbs better describes how you have gone through the article on these available services?

- A. Lightly
- B. Thoroughly

QUESTION 3.

THE ADMINISTRATION'S
UNDERSTANDING:

Which of the following adverbs better describes how familiar the administration is with this available help in planning?

- A. Lightly
- B. Thoroughly

QUESTION 4

YOUR EXPECTATIONS:

Which of the following words best summarizes what you hope to get as the primary function of this planning session?

- A. Information
- B. Service

QUESTION 5

PRIMARY AREA
OF CONCERN:

It is presumed you are interested in both of the following areas. Which of the following two choices expresses your primary concern?

- A. Career Education
- B. Occupational Education

QUESTION 6

PRODUCT DESIRED:

Which of the following items best identifies what you want to get as a result of this training session?

- A. Printed materials I can read
- B. Training materials I can apply back home
- C. Printed materials I can hand out to my teachers

QUESTION 7

TIME LINE: How soon do you have to get going on implementing this training?

- A. Long term (three months or more in the future)
- B. Immediate (I must start right now)

QUESTION 8

THE PLANNING TARGET: From the following two choices, which is the greater concern of your planning?

- A. Educational improvement in general
- B. A specific area of concern; specify: _____

QUESTION 9

INFORMATION TRANSMISSION: Of the following two choices, which do you prefer as the medium or mode of receiving information?

- A. Microfiche documents
- B. Face-to-face training sessions

QUESTION 10

PLANNING EVALUATION: Which of the following criteria will be used by your administrator to evaluate you?

- A. How many performance-behavioral objectives and criterion-referenced test items have been written?
- B. How have performance-behavioral objectives and criterion-referenced test items been used to improve instruction and learning?

QUESTION 11

LOCAL STRUCTURE: Which of the following do you expect to get from our central planning system?

- A. A series of guidelines and directions
- B. A chance for us to exercise local autonomy

QUESTION 12

FREQUENCY OF SERVICE: In the next twelve months what do you anticipate to be the number of training sessions you can reasonably expect?

- A. A one shot training session
- B. An on going continuous development of training sessions; probably, the number of training sessions we will have will be _____.

QUESTION 13

MOST IMMEDIATE NEED: Which of the following spells out your top priority concern?

- A. To convince the administration that something needs to be done
- B. Help with a specific problem area; specify: _____
- C. Convince the administration I am doing something worthwhile.

QUESTION 14

PROGRAM AREAS
TO BE DEVELOPED: In which of the following program areas do you expect to begin?

- A. Existing programs
- B. New programs; specify: _____

QUESTION 15

ANTICIPATED INVOLVEMENT: Which of the following do you presume will be the normal method of planning?

- A. Outlines, notes, and sessions we will give to our own teachers
- B. Training sessions you will give to our teachers

QUESTION 16

MODULE MODEL: Of the following ways to develop instructional and learning modules, which one have you chosen or investigated more thoroughly?

- A. The ag. module
- B. The matrix module
- C. The consensus module
- D. The paperwork module
- E. The individualized teacher module
- F. The nine sentence module to be written, tested, and revised as needed

QUESTION 17

TECHNOLOGY TARGETS: How do you use educational technology in your present school program?

- A. As supplemental material, for example, review purposes and make-up sessions
- B. For course presentation, for example, courses that can be fully completed in a resource center with minimum teacher involvement

QUESTION 18

CURRENT USES
OF TECHNOLOGY:

Which of the following are you presently using? Give examples after each choice you indicate, specifying the course in which you use the material.

- A. Programmed texts
- B. Semi-programmed materials (these leave room for greater teacher involvement)
- C. Video tapes, super-8 film and sound (media that cannot be interrupted for replaying and repetition)
- D. Slide tapes, film loops, and cassette sound (media presentations that can be interrupted for repetition, review, and request for further information)
- E. Hands-on classroom wherein students can work with machinery and equipment

QUESTION 19

DESIRED TRAITS: Which of the following traits do you wish to develop in any objective to be attained with your teachers?

- A. Simple
- B. Inexpensive
- C. Minimum training time
- D. Applicable to all course areas for career education

BEHAVIORAL OBJECTIVES
WON'T DO
ANY GOOD UNLESS

28

Overview	1. Matrix	Objective Evaluation Resource
Experience	2. What you're already doing unsystematically. Take it and organize it.	(Spell it out) (Fill in gaps)
Acceptance	3. It must make sense to students	(Values)
Ownership	4. It must be "edited" by students	(Part of me)
Involvement	5. Some students can. Later on, more will.	(Cassettes. Posters) (Charts. Before/After)
Payoff	6. Reward Progress	(Enjoyable)
Challenge	7. Room to Improve	(Change) (Re-arrange)
Efficiency	8. Easy and Short to Write	(Tension) (Reducing)
Organization	9. Make sure details lead to goals	

Time

Day 1 = 1 = Class 1

Day 2 = 2 = Class 2

Day 3 = 3 = Class 3

• • • • •

Day 9 = 9 = Class 9

Goal

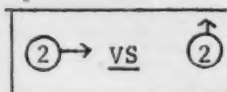
Objective 1 = ①

Objective 2 = (2)

Objective 3 = ③

• • •

Objective 10 = (10)



Mastery

$\uparrow$
 (2) = Objective 2 attained 100%
 $\uparrow$
 (3) = Objective 3 attained 100%
 $\uparrow$
 (4) = Objective 4 attained 100%

Exposure	without Mastery
----------	-----------------

(5) $\rightarrow$ = Objective 5 attained 12%
 (5) $\nearrow$ = Objective 5 attained 40%
 (5) $\searrow$ = Objective 5 missed plus frustration.
 (6) $\rightarrow$ = Objective 6 attained 13%

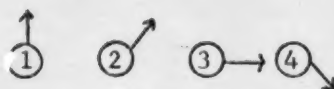
Course-Chopper VS Mastery-Developer

Course-Chopper



I Apparent Sequence

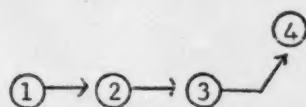
- Dull
- Same Level of Mastery



II Detailed Sequence

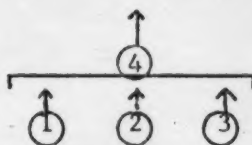
- Lack of 100% Success
- Actual Deterioration

Mastery-Developer



I Apparent Sequence

- Same Level of Mastery
- Sudden Improvement

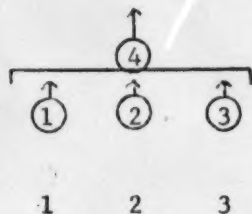


II Detailed Sequence

- Tiny Steps Upward (100%)
- A Giant Step Upward

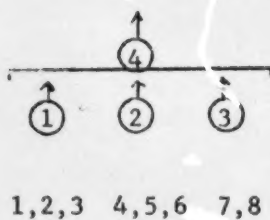
Why This Giant Step

- 1st Interest
 2nd Compound Interest
 3rd Capital Gains
 4th The First Million is the Hardest

Fast Learner

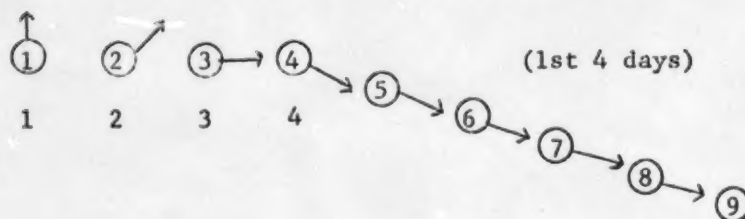
(4th Day)

(1st 3 days)

Slow Learner

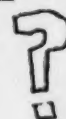
(9th day)

(1st 8 days)

Frustrated Learner

(1st 4 days)

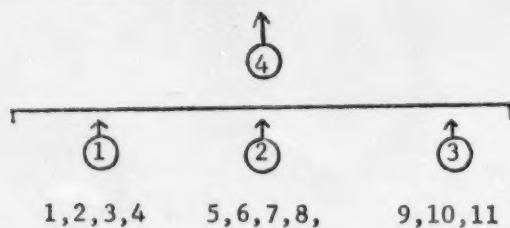
What Can We Do for the
Frustrated Learner



We Can't

- 1) Condemn the system unreasonably
- 2) Change the system over night
- 3) Give up the fight
- 4) Push all at the same speed

We Can



Even if we must

- ① Pace our course to:
 - (a) the program
 - (b) the average learner
 - (c) the final exam from above
- ② Remediate
 - (a) On our own
 - (b) With media
 - (c) With modules
 - (d) With help from the best students
 - (e) With more time and effort